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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,948	03/16/2001	Duanyi Xu	NTP-101US	7231
23122	7590	03/16/2004	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			PATEL, GAUTAM	
			ART UNIT	PAPER NUMBER
			2655	

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/810,948

Applicant(s)

XU ET AL.

Examiner

Gautam R. Patel

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,7,8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,8,10 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**Response to Amendment:**

1. This is in response to amendment filed on 2-6-04 (Paper # 10).
2. Claims 1, 3-5, 7-8 and 10-11 remain for examination.

***Claim Rejections - 35 U.S.C. § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 7-8, and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Tachibana et al., US. patent 5,529,864 (hereafter Tachibana).

As to claim 1, Tachibana discloses the invention as claimed [see Figs. 1-3, especially fig. 1] including a substrate, a reflective layer, a protective layer and mask layer comprising:

a substrate [fig. 1, layer 11] in which components of at least one wavelength light beam are recorded by modulating transmissivity of the substrate for each of said components, wherein information layers of a substrate are located within a focal depth of an objective lens for reading the optical disc [col. 3, lines 7-27 and col. 3, lines 54-67];

a reflective layer [fig. 1, layer 17] on the substrate to reflect the modulated optical signal; and

a protective layer [fig. 1, layer 18] on the reflective layer [col. 3, lines 7-27 and col. 3, lines 54-67]; and

a photochromic super-resolution mask layer sandwiched between the substrate and the reflective layer, photochromic super-resolution mask layer comprising light-order non-linear photochromic materials thus selectively reducing a read-writing facular size [col. 3, lines 14-20] of one of the wavelength light beams, wherein all of the

information layers and the mask layer are located within the focal depth of the objective lens [col. 3, lines 7-67]

4. As to claim 3, Tachibana discloses:

the information layers of the substrate comprise photochromic materials  
[ABSTRACT & col. 2, lines 24-27].

5. As to claim 4, Tachibana discloses:

The information layer being pre-stamped with information pits [inherently present].

6. As to claim 5, Tachibana discloses:

a substrate [fig. 1, layer 11];  
multiple recording layers [fig. 1 layers 13-18] on the substrate, wherein multiple recording layer comprising it least one kind of photochromic material [col. 2, lines 24-27], said recording layers being orderly arranged one by one on the substrate, and said multiple recording layers located within the focal depth of an objective lens [inherently present to be useful] for reading or writing the disc [col. 3, lines 7-67];

a reflective layer [fig. 1, layer 17] on the recording layers to reflect the light signal transmitted from the recording layer; and

a protective layer [fig. 1, layer 18] on the reflective layer [col. 3, lines 7-67]; and

a photochromic super-resolution mask layer selectively reducing a read-writing facular size [col. 3, lines 14-20] of the light beams, wherein at least one of the said multiple recording layers is sandwiched between the photochromic super-resolution mask layer and the reflective layer, and wherein the recording layer and the mask layers are located within the focal depth of the objective lens [col. 3, lines 7-67].

7. As to claim 7, Tachibana discloses:

at least one recording layer of said multiple recording layers comprises a compound of at least two kinds of photochromic materials [col. 3, lines 7-67].

8. As to claim 8, Tachibana discloses:

said at least one recording layer comprises an organic compound of at least two components selected from a group consisting of spiropyran, spirooxazine, fulgide or axo, or the mixture thereof [col. 4, lines 24-27].

9. As to claim 10, it is rejected for similar reasons set forth in the rejection of claim 8, supra.

***Claim Rejections - 35 U.S.C. § 103***

10. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Tachibana as applied to claims 1-5 and 7-10 above.

As to claim 11, Tachibana discloses all of the above elements, including thickness of the layer [0.5 um, to 10 um see col. 3, lines 1-6]. Tachibana also discloses that this thickness can vary and shows examples of various variations in this thickness as different samples. Tachibana does not specifically disclose, well known fact, that the thickness of other layers may vary between 5 nm to 100 nm]. As mentioned before Tachibana teaches that thickness of the layers can be selected. The limitations in claim

Art Unit: 2655

11 does not define a patentable distinct invention over that in Tachibana since both the invention as a whole and Tachibana are directed to a multi-layer disk . The degree in which the thickness of disk is selected presents no new or unexpected results, so long as the different appropriate thickness is selected according to wavelength of laser. If one has more penetration capability a thicker layer is selected if one has less capacity of laser to penetrate a thinner layer is selected. Therefore, to have thickness between 5 nm and 100 nm would have been routine experimentation and optimization in the absence of criticality.

11. Applicant's arguments with respect to claims 1, 3-5, 7-8 and 10-11 have been considered but are moot in view of the new grounds of rejection.

***Other prior art cited***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Tsujioka et al. (US. patent 5,592,462) Method of recording ...

13. Applicant's amendment necessitated the new grounds of rejection presented in this office action. Accordingly, THIS ACTION IS MADE FINAL. See M.P.E.P.

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2655

### **Contact Information**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

A handwritten signature in black ink, appearing to read 'G. R. Patel', with a horizontal line extending from the end of the signature.

Gautam R. Patel  
Primary Examiner  
Group Art Unit 2655

March 11, 2004